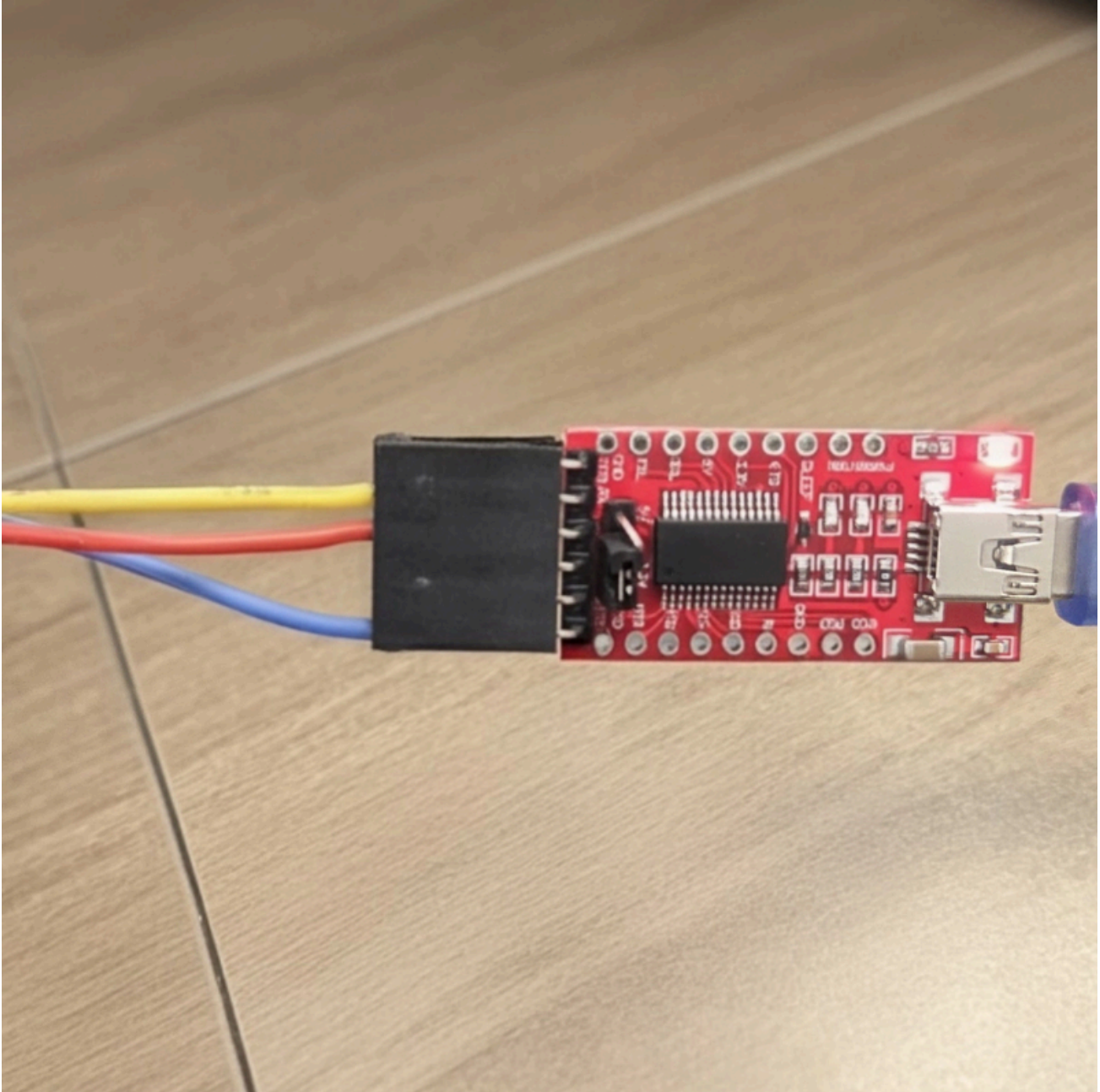
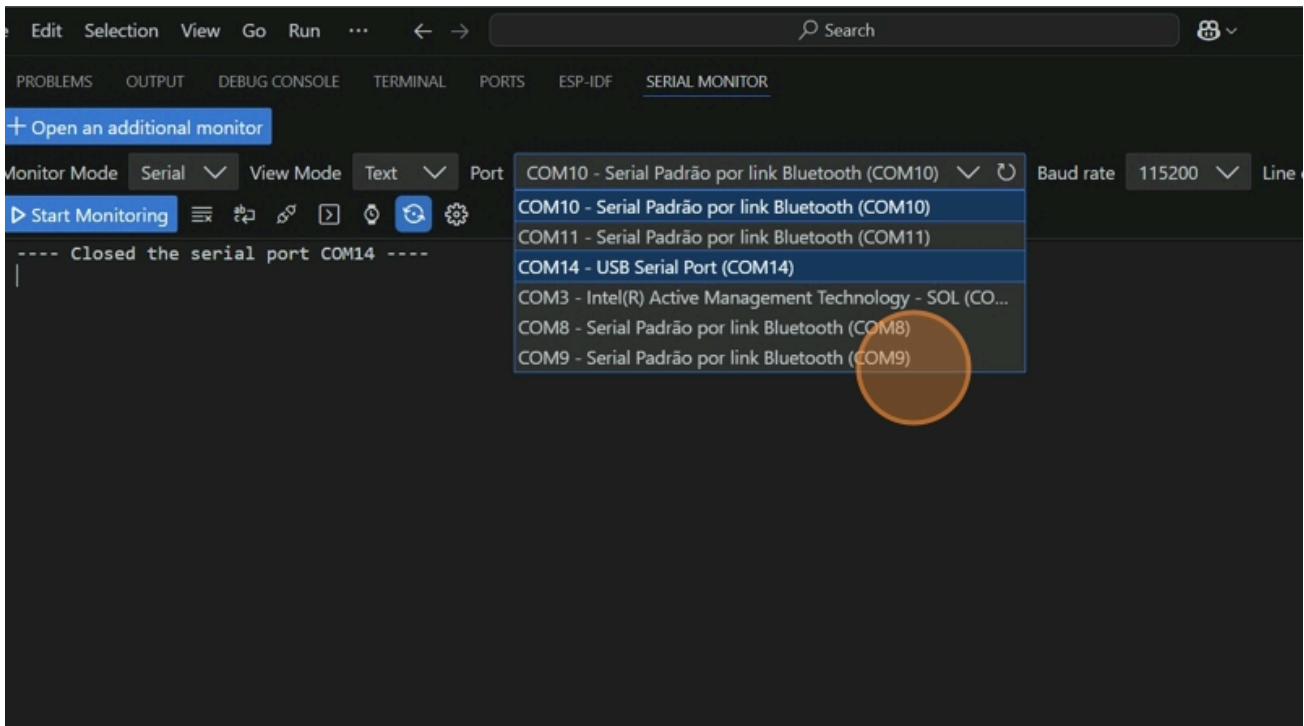


STU-Gen2 - Sub GHz Radio - Testing and EMI Monitoring

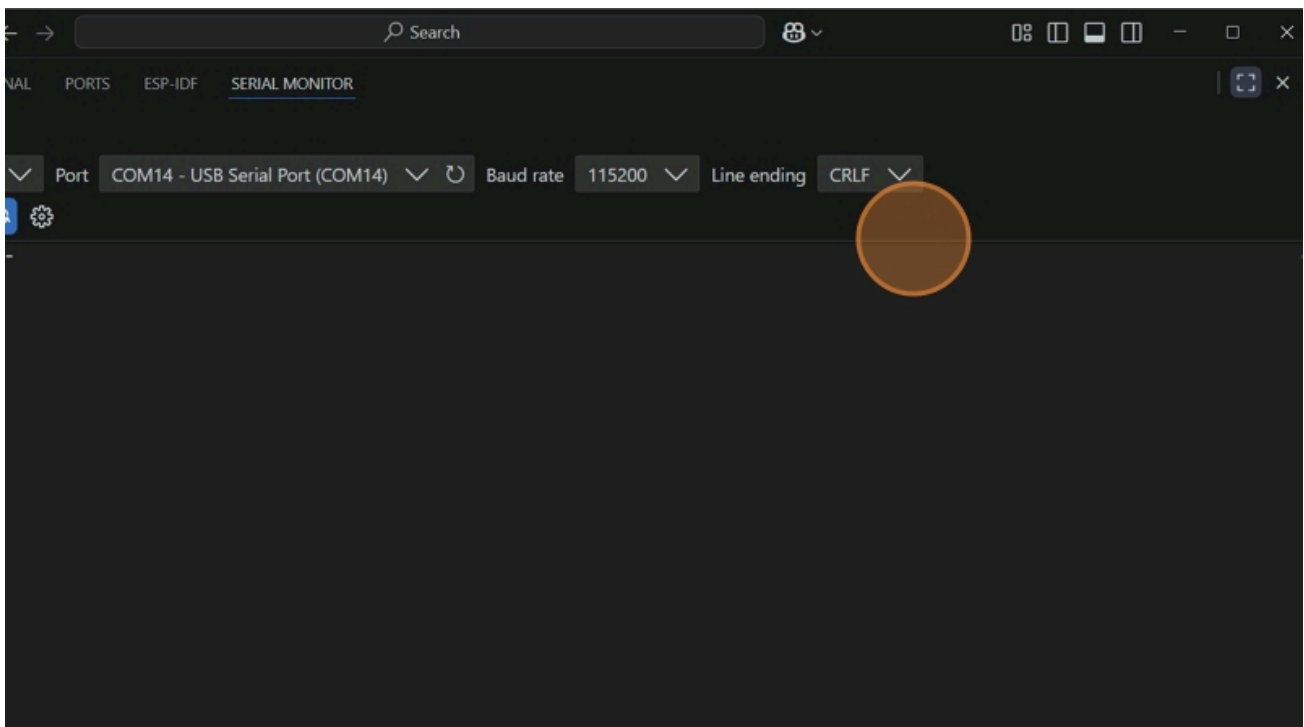
1. Connect the FTDI converter to a PC. Connect the sensor's serial cable as shown in the diagram below. Please note that the blue wire corresponds to GND (ground)



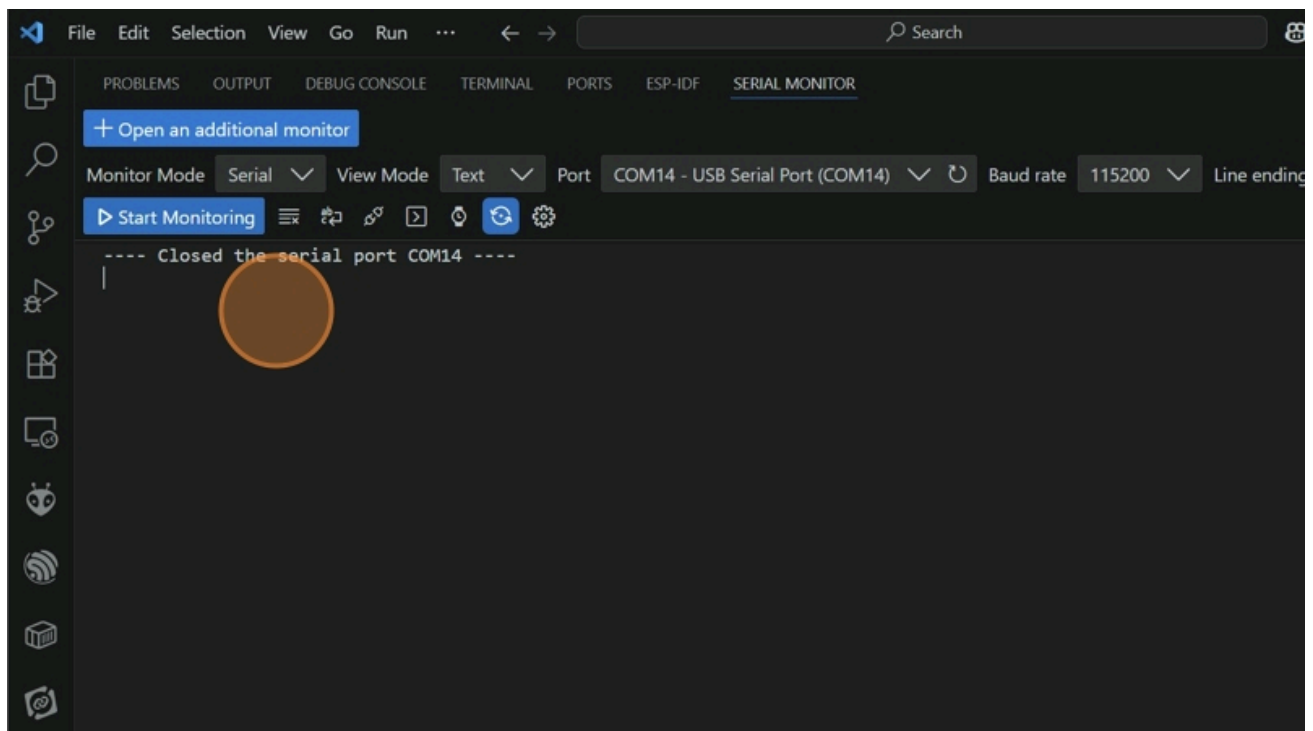
2. Open a serial console in line mode (e.g., PuTTY, VS Code Serial Console, Minicom), and select the appropriate serial port.



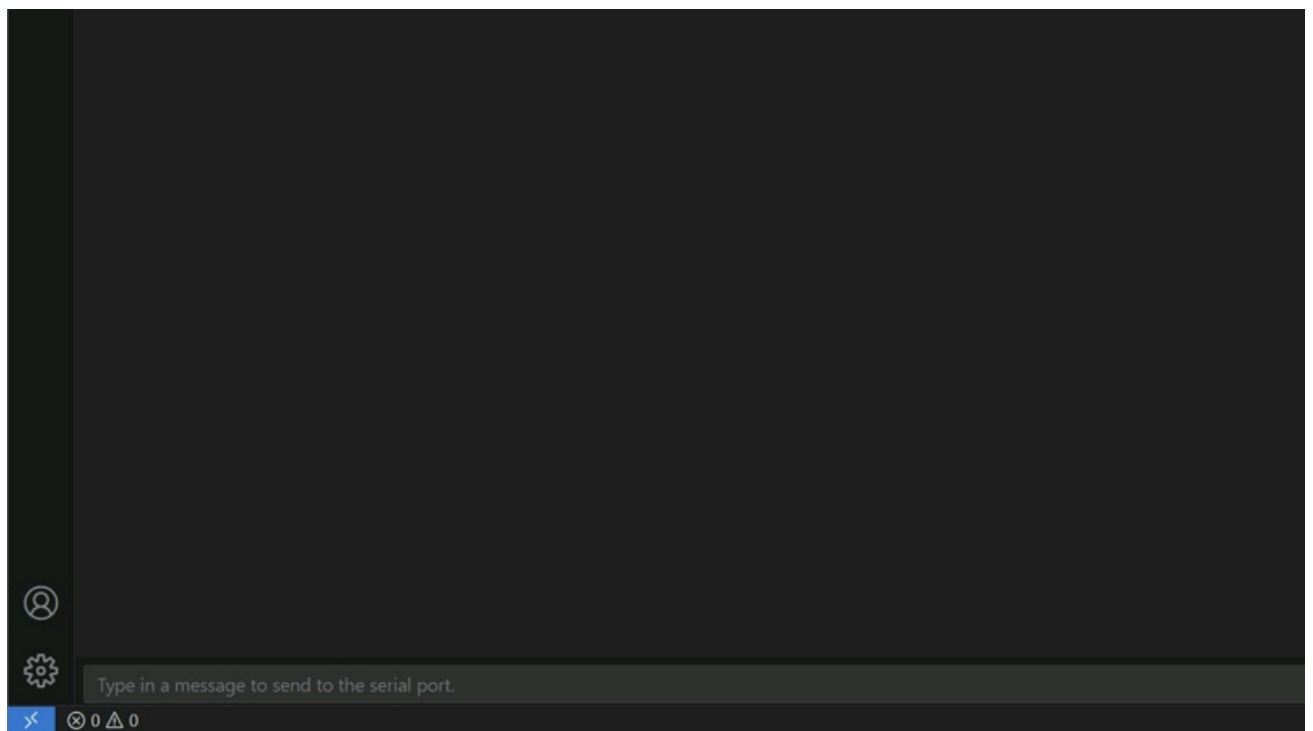
3. Set baud rate to "115200"



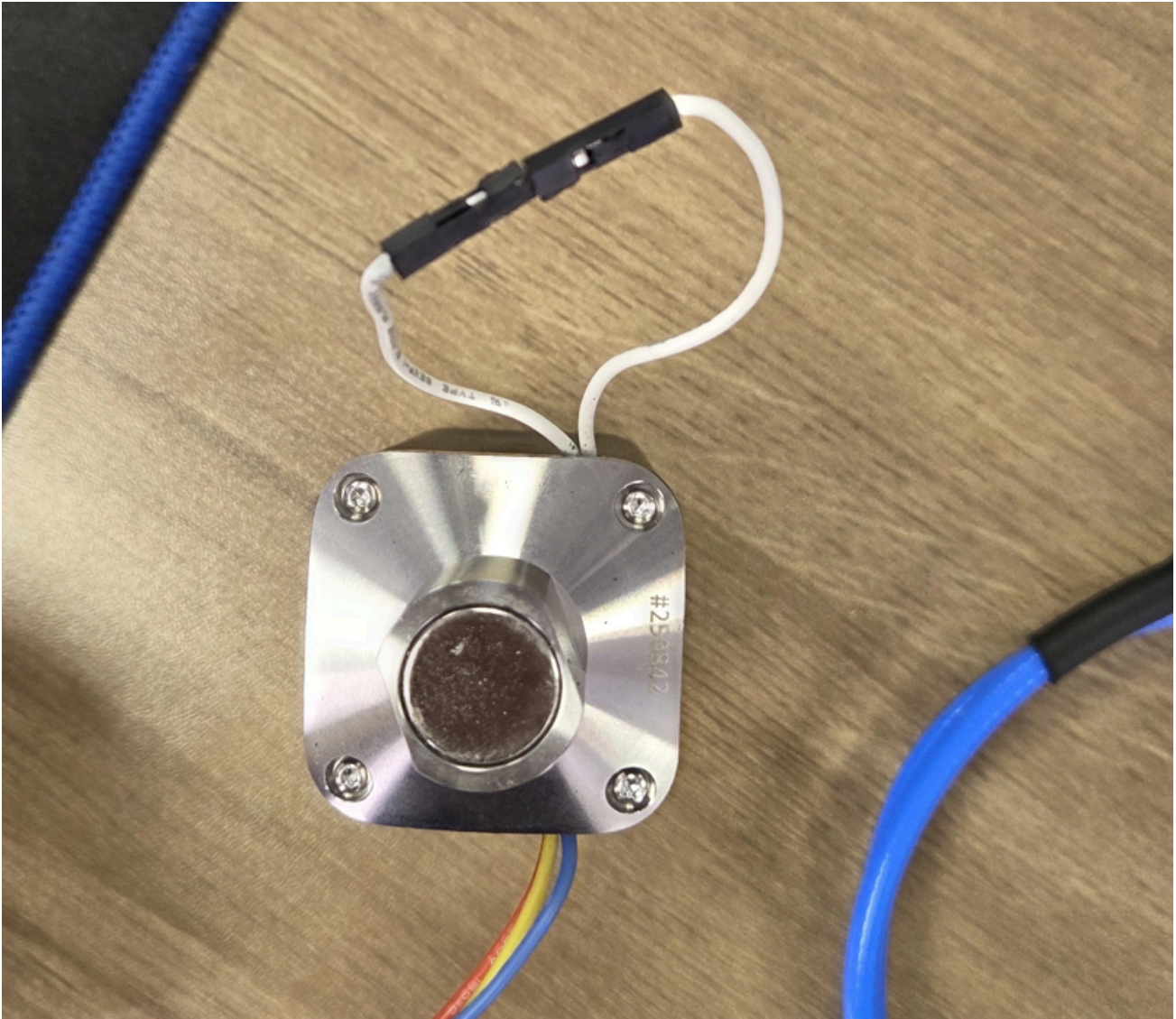
4. Click on "Start Monitoring" or Connect



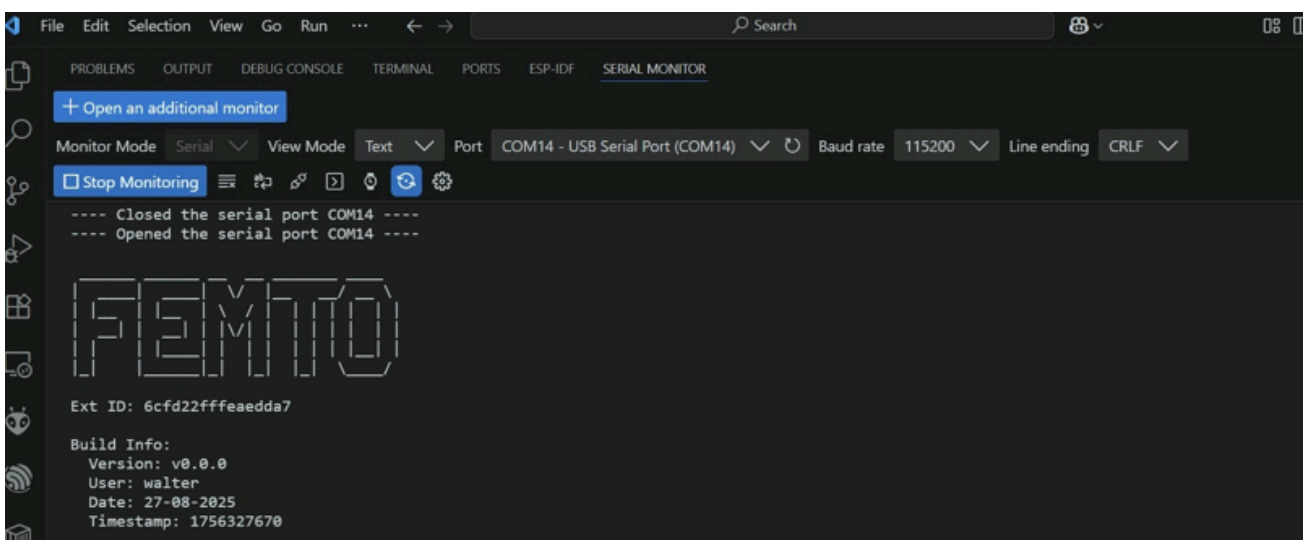
5. Click on the message bar to type the command:



6. Turn on the device, connecting the connector on the white cables as shown in the photo below:



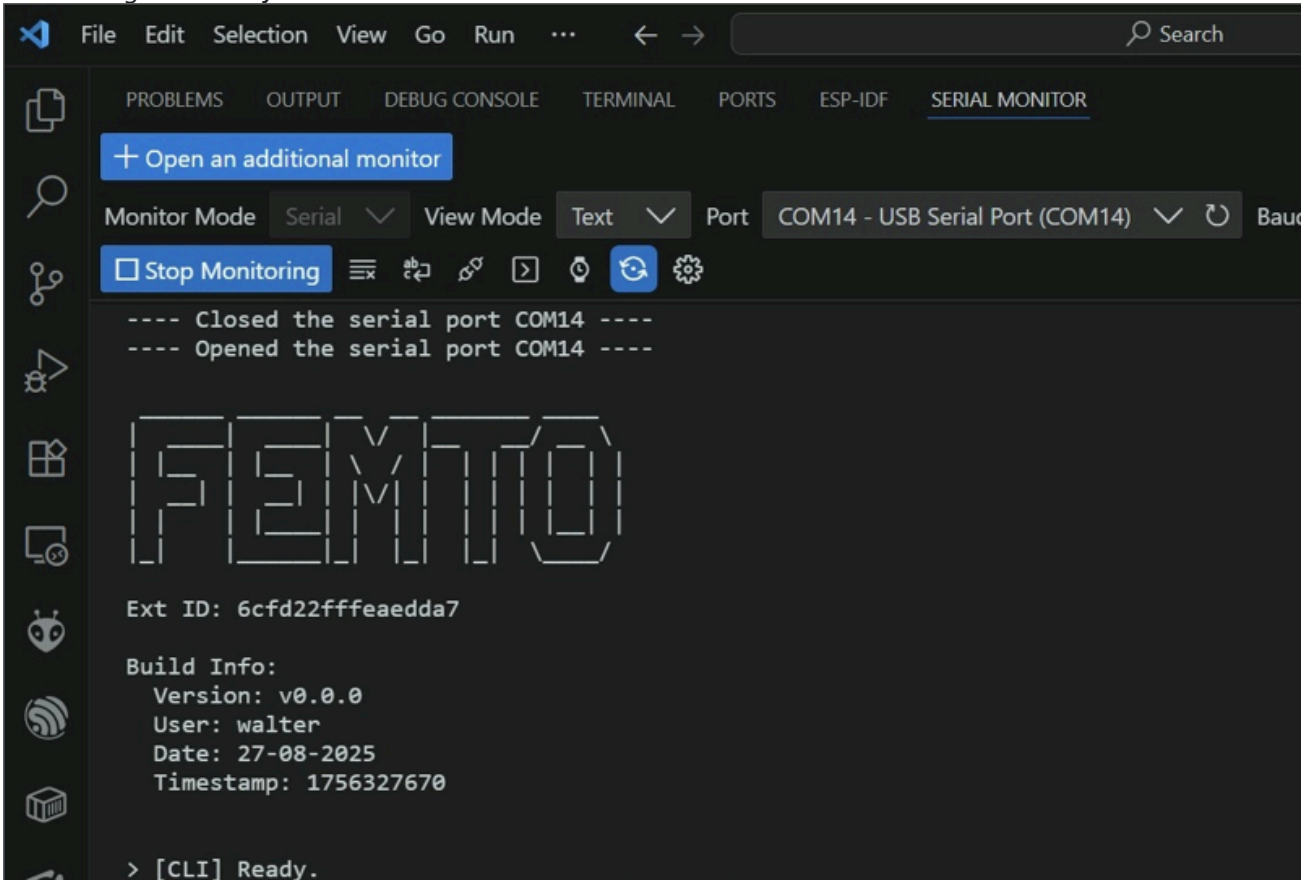
7. After turning on the device, the message below will be shown on the screen.



8. Log in to the CLI console sending the command:

```
cli passcode 1234
```

The message CLI Ready is shown on the screen.



9. Turn the Sub radio on sending the command:

```
radio sub_enable 1
```

9. Prepare two samples for loopback test

- **Sample A (DUT):** Connect this unit as the **RX loopback device**. This is the one being tested under EMI conditions.
- **Sample B (Monitor):** Connect this unit to the **PC serial console** (as described in steps 1–8). It will run in **TX loopback mode**, transmitting continuously and printing the communication logs on the screen.

10. Configure RX Loopback (DUT)

On **Sample A (DUT)**, log into the CLI console and enter the command:

```
radio sub_loop_rx <channel> <address>
```

- Replace `<channel>` with the desired test channel (decimal).
- Replace `<address>` with the MAC address of the TX device. Use `ffffffffffffffff` if broadcasting.

✓ **Expected behavior:** The DUT starts listening for incoming loopback packets and automatically echoes them back to the sender.

11. Configure TX Loopback (PC Monitor)

On **Sample B (PC Monitor)**, log into the CLI console and enter the command:

```
radio sub_loop_tx <channel> <power> <period> <address>
```

- **<channel>** : Must match the RX channel set on the DUT.
- **<power>** : Transmission power in dBm (e.g., 0 , 5 , or 10).
- **<period>** : Transmission period in milliseconds (defines the packet interval).
- **<address>** : MAC address of the DUT. Use ffffffff to broadcast.

✓ **Expected behavior:** The monitor device starts transmitting loopback packets (sequential numbers). For each received response from the DUT, the communication is printed on the PC console.

12. Verify Communication

- Confirm that packets are being transmitted and looped back correctly.
- The PC console should display a continuous stream of sequential packet numbers, proving that the DUT is receiving and responding under EMI test conditions.

14. Set CLI Timeout

If needed, adjust the inactivity timeout for the CLI session using the command:

```
cli timeout <time>
```

- **<time>** : Timeout value in milliseconds.

Example: cli timeout 60000 sets the timeout to 60 seconds.

Use 0 to disable the timeout completely.

✓ **Expected behavior:** The CLI session remains active according to the configured timeout, preventing disconnections during long EMI tests.